Chief of Naval Operations
Adm. Jonathan Greenert

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Admiral Greenert: What an introduction. I didn't know I was a historian and all that. I stayed at a Holiday Inn Express, you know how that goes, right? They say well, when you just say things and they seem to work out.

But I want to thank the American Society of Naval Engineers as a co-host here. I'm really honored to be here. It's one of the biggest places or fora I've ever spoken to with a crowd this size. It's great.

It's good to see team mates here from science and technology. I didn't come into this job with this thing for, if you will, science and technology and bringing stuff in. But what I've seen going out to our labs, going over to the Office of Naval Research and all that, told me we've got to get things moving. Not to mention when I look out there at potential adversaries and how they can turn things quickly and we're not as quickly as I would like to. There are reasons for that. Then I said you know, you're the folks that are going to make things happen.

Think about it. Over the next 15 or 20 years we've got to modernize quite a bit of the things that we did quite a while ago. In the '50s we put together our Strategic Nuclear what we call the Enterprise today. The SSBN. We didn't build the SSBNs -- I mean we built the first ones back then, and we replaced them with the Ohio, and now we have what we call, what else, the Ohio Replacement. We'll get a name, we'll get around to that. But it is somewhat, somewhat revolutionary, mostly evolutionary. But we've got to replace the bomber, the ICBMs, all this in the next 10 and 15 years. The Ballistic Missile Defense, the concept, the afloat concept for sure. We're still getting a lot of the ground -- I mean it's getting to its limits and it's time to move no quickly to the next phase.

Our strike fighter concept. We say okay, great, the Joint Strike Fighter, some of you are involved in that. What does the next fighter look like? I'm not sure it's manned. I don't know that it is. You can only go so fast. You know that stealth may be overrated. I don't want to say necessarily that it's over, but let's face it, if something moves fast through the air and disrupts molecules in the air and it puts out heat, I don't care how cool the engine can be, it's going to be detectable. So what will that next strike fighter -- You get my point.

A lot of this is going on over the next two decades. So we will turn to you for how things are going to get done. And you know the old saying. Hey, everybody, money is tight. It's time to think. That old saying is really back and right in front of us today.

Technology is proliferating kind of rampantly because it wasn't all that long ago that not many had a smart phone. I mean you had to be rich to have that. SatCom, satellite imagery. You had

to have a huge infrastructure for all that. But not today, as you know. It's commercial and it's cheap.

Unmanned systems, aerial systems, that was science fiction. That was a cool movie you'd see here and there, and now you get it for a Christmas gift -- an unmanned aerial system. You know, it's amazing where we're going.

So what's the point in all that? When I bring it together I say technological lead is perishable, and it will be for the foreseeable future. So we've got to stay out ahead, and it's us that will do that. People in this audience that will take care of that.

The situation was acknowledged by the Secretary of Defense recently. He called for innovation and support of a new offset strategy, what the Deputy Secretary calls our third offset strategy. I won't go into great detail about that. He had a pretty good speech recently, it's out there, for the Center for New American Security and I commend it to you. It's simple to read. He speaks straight to the point and it gets there.

So what can you do for me as the Chief of Naval Operations? First, my job is to organize, train and equip a force. Okay? It's Naval Operations. I sure wish I could do more naval operations. That was fun. And I know many of my fleet commanders say you think you're doing naval operations, but you should be organizing, training and equipping. But we need, I need relevant capability and a capable force for the future and I need confident leaders. So we'll go to work on a diverse force that is enabled, that is motivated and of course is proficient and confident. But I need relevant capability and that's where you come in.

Our science and technology investments are really the source of our war fighting advantage. You know that. That's where it's going to come from. You invent it, adapt it, employ it, and put together an emerging technology into something that is functional and useful. And I'd like to influence that and I need to communicate to you clearly, we need to communicate to you clearly, what do we need out there? I mean the days of hanging around and waiting for a guy in a lab coat to come in and yell Eureka, I think I've found a new whatever, I just don't think we have the time -- that's what I was talking about -- nor do we have all the money to do that.

So we're working on two time scales. The basic research, that's the long term. Many of you do that. That's good. But there's a short term, what I call speed to fleet. My predecessor Gary Roughead called speed to fleet. It's getting things out there and trying them out as soon as possible. I call it let's get wet quick. Let's get this thing out there. It will be orange and it may look kind of odd put together and won't have the nice slick red/gray paint and it won't be totally tested and it might fail, but we've got to get it out there and see what we can do with that.

You've seen examples on videos here. You're going to have displays of things. We're getting better at that and I want to keep doing that.

You have a history of game changers, of getting things out there quickly. The GPs, the Aegis radar and weapon system, the Hawkeye radar which took us from really a quantum leap in range, resolution, the ability to share that air picture, the towed array, to be able to separate from a

platform and all the noise that platform generates, a sensor, and then be able to expand what that sensor can get. It totally opened the undersea domain to us and it's a key reason why we own the undersea domain. But it's also the Achilles heel for our submarine sin the undersea domain. Quiet propulsion. Not only in our submarines but in our surface ships.

There's a great picture of the Zumwalt, really the one that's the most famous -- not famous, the common picture, and there's a tug just mooring it alongside up there. The key to that if you look at it is that that ship seems to be about the size of that tug, both on radar and on sonar. That's the degree of quieting that you all have put together for us on surface ships when you look at that in the future. So we'll continue to rely on you.

Let me just give you three things that are important to me. I could go up here and ramble on, but Matt Winter, I've got to give him credit. He said you've got 30 minutes. Get up there, talk, ask some questions, get the hell out of there. I'll get the real guy up here, Bob Ballard. Nothing like being a start-up band for somebody, the greatest explorer in the undersea domain.

But I digress.

Number one, you've got to get us off gun powder. Get us off gun powder and rocket propellant at sea. Not totally. It will take a while to do that. But you're leading the evolution and it's about that laser, that possibility that that laser which we're out there testing now, and the rail gun.

We will have an incredibly deep magazine when we can bring those in.

Probably the biggest vulnerability of a ship is its magazine because it's where all the explosives are. You hit the magazine, kaboom, that's where all those photos are unless you got hit by a torpedo. That shell hits that or that rocket hits it and you see the big explosion. That's it. Imagine getting rid of that. The safety on board, the logistics you take, and the cost. The cost of one of these shots on today's laser is about a dollar. Okay? That's not too bad. And we've demonstrated it on the Ponce. She's being demonstrated out there today. I like what I see. I happened to be out there in the Gulf. I saw it in late November and it's working pretty good. Bring that along.

Rail gun, $25,000 a round. You say that's a little pricey. Well a missile half its range is a million dollars a round. So that's a scale I can deal with and that we would love to have, and those projectiles, those of you familiar with it, we are making them able to do a whole host of things. The projectiles on a rail gun. So let's move ahead in that.

We're having a ship war demonstration in '16. I'm very excited about that. Those of you who have put that together, Dahlgren, et al, I thank you very much for that. I think that will demonstrate this capability and open the eyes of a whole bunch of people, both in industry and certainly in the Department of Defense.

So get me off gun powder, number one.

Number two, I need stamina in the unmanned, underwater vehicle propulsion systems that we have today. I need them combat, reliable, in their power and in their propulsion. But I need them safe and they have to be able to be handled and managed by sailors. We're doing pretty well in the air, but it's a hurdle in unmanned underwater vehicles. We need much more increased range and endurance so that we can expand the scope of the mission.

They're smart enough to operate, they need to be smart enough to operate effectively out there. That is they've got to be autonomous in the environment. So that autonomy and the software with an open architecture system will allow us to get moving in that.

So the advances that we need in the unmanned underwater vehicles are really right now all about the propulsion systems.

As our submarine numbers go down, and we're going to have a dip. It's inevitable. We built so many in the '80s, and as we replace them we're going to have a dip for about 12 years, from the mid '20s to the mid '30s. But even without that, we need to keep that dominance in the undersea domain. We need that network and unmanned underwater vehicles are key to that.

And then number three, I need you to lock your IT doors. Lock your doors in there, because you do it at home and you need to keep that mindset at work. Cyber security is a very key requirement for all our systems and weapons, and if you say to me, give me the two things that keep you awake at night, the first one I can't tell you because it's classified, but the second one is the losing of proprietary data on high technology from cleared defense contractors. It is just driving me crazy and I'm very worried about that.

So it's not just desktops. It's chips in embedded systems. If something has a circuit board it can be attacked and it can be extracted. The security has to be designed in. You can't bolt in afterwards. So we have to get into that earlier and earlier.

Cyber security including guarding your intellectual property is really key on high tech. So what's high tech today, you hand it over to us, it's highly classified tomorrow. I think you understand the vulnerability of that and losing that. Cyber theft is just hemorrhaging us.

So think cyber safe. Some of you remember sub safe. Think cyber safe in that regard.

So I'm counting on you. You are going to keep us on the bow wave of innovation as we move ahead. It's not necessarily something, the innovation, what I mentioned is not necessarily going to be digital and lightning bolts and sparks. We have a lot of great innovation going on out there and some of you are involved, just adapting our force packages that we put on our support ships. It turns a simple looking support ship all of a sudden into a great humanitarian resistance, disaster relief, or it's a ship that can support SEALs, Special Forces. It's a ship that can go save people, go in and get high value targets, terrorists, or pull people out of an embassy. And that's innovation.

So it comes in all sizes, shapes and forms.

Let me wop now and see if you guys have got any questions. I'll be happy to address the questions you might have. Thank you very much.

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